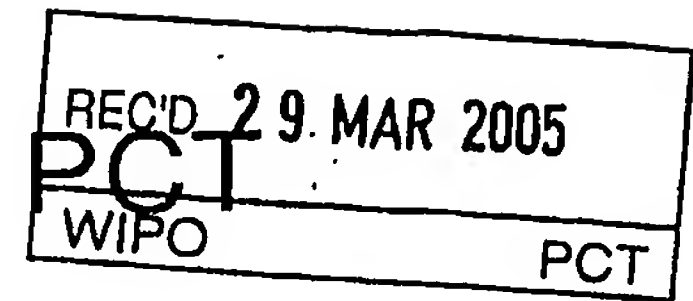


PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY



To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/B2005/050362

International filing date (day/month/year)
27.01.2005

Priority date (day/month/year)
06.02.2004

International Patent Classification (IPC) or both national classification and IPC
G02F1/167, G09G3/34

Applicant
KONINKLIJKE PHILIPS ELECTRONICS N.V.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☒ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/IB2005/050362

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
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Box No. II Priority

1. ☐ The following document has not been furnished:

☐ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. ☒ The International Searching Authority has not been able to consider the validity of the priority claim because a copy of the earlier application whose priority has been claimed was not available to the International Searching Authority at the time that the search was conducted (Rule 17.1). This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

4. Additional observations, if necessary:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-20
	No: Claims	
Inventive step (IS)	Yes: Claims	1-20
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-20
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VI Certain documents cited

1. Certain published documents (Rules 43*bis*.1 and 70.10)

and / or

2. Non-written disclosures (Rules 43*bis*.1 and 70.9)

see form 210

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Cited documents

The following document is referred to in this communication:

D1: WO 03/019279 A (KONINKLIJKE PHILIPS ELECTRONICS N.V) 6 March 2003
(2003-03-06)

2. State of the art

The state of the art represented by the document D1, which is considered to represent the most relevant state of the art, discloses an electrophoretic display having at least two types of charged particles with particles having the same electrical charge, but different mobilities and colours. Each type of particle is stored in a reservoir which is not visible. A region in which all particles can be at the same time determines the optical state of the pixel. The driving scheme used for this device is rather complicated and involves pulses which have to be perfectly adapted to the mobility of each type of particles. Furthermore, the mobility of the particles must be very well controlled in order for the display to work properly.

Therefore, the problem to be solved by this invention is how to simplify the driving scheme and the manufacturing of a coloured electrophoretic display.

3. Invention

According to this invention, this problem is solved in the following way (claim 1):

a structure wherein at least two types of particles having different colours is used. The driving scheme is defined such that the particles of one type (one colour) are always physically separated of the particles of an other type (an other colour). This is realised using driving means which are able to control the transition between two pictures and the displaying of the pictures in such a way that no contact between the different types of particles is obtained. Which means that only one type of particles is present at a determined time in a determined region.

Furthermore, a method of driving an electrophoretic display having the characteristics of the device of claim 1 is also claimed (claim 19).

4. Novelty and inventive step

None of the cited documents describe an electrochromic display wherein the control means allow the displaying of a picture and the transition between two pictures without bringing two types of particles in the same region at the same time. The subject-matter of claims 1 and 19 is therefore new in the sense of Article 33(2) PCT. Furthermore, the prior art always suggests to use particles having different physical electrical charges or mobilities in order to separate them physically. The use of a special structure combined with a driving scheme which lead to a spatial separation of the particles having the different colours is not suggested in the prior art. The subject-matter of claims 1 and 19 is therefore considered to involve an inventive step in the sense of Article 33(2) PCT.

5. Dependent claims

Claims 2-18 (resp. 20) are dependent on claim 1 (resp. 19) and as such also meet the requirements of the PCT with respect to novelty and inventive step.

Re Item VI

Certain documents cited

Certain published documents

Application No Patent No	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)
US2004/0252361	16/12/2004	12/12/2003	12/06/2003

Re Item VIII

Certain observations on the international application

The use of the expression *separate regions in the common region* is confusing and unclear. In fact the two types of particles are all in the common regions but are spatially separated from each other. The term *separate regions* is misleading as it seems to refer to a particular domain of the common region. The subject-matter of

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/IB2005/050362

the concerned claims, in particular claims 1 and 19, is therefore unclear.